



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,071	03/11/2004	Dominic John Goodwill	PAT 3178-2	4359

26123 7590 04/20/2006

BORDEN LADNER GERVAIS LLP
WORLD EXCHANGE PLAZA
100 QUEEN STREET SUITE 1100
OTTAWA, ON K1P 1J9
CANADA

EXAMINER


NGUYEN, SANG H

ART UNIT	PAPER NUMBER
----------	--------------

2877

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/797,071	GOODWILL ET AL. 	
	Examiner	Art Unit	
	Sang Nguyen	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 13, 19-27, 34 and 40-57 is/are rejected.
- 7) ☒ Claim(s) 8-12, 14-18, 29-33 and 35-39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>03/11/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 03/11/04 has been entered. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

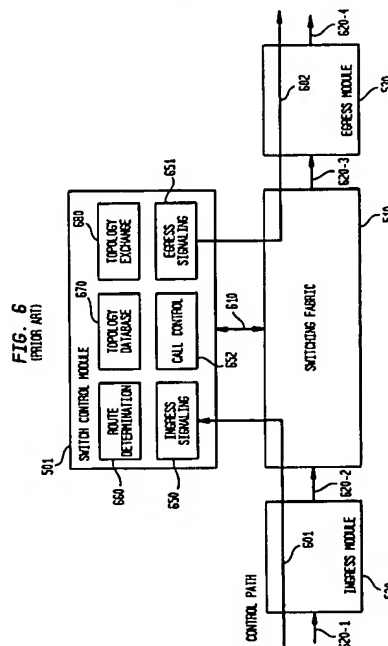
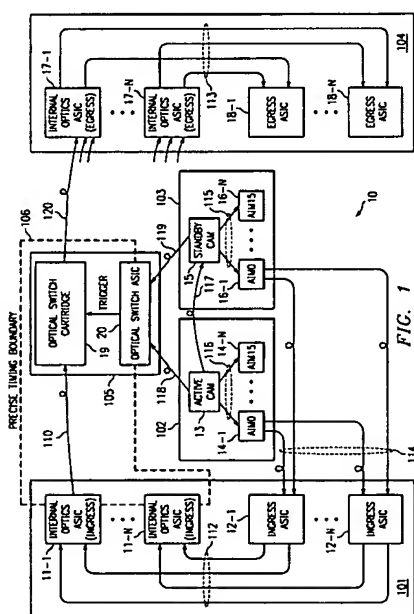
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 19, 22-23, 28, 48, 50, 53, 55, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer et al (U.S. Patent No. 6,711,357) in view of Chen (U.S. Patent No. 6,563,835).

Regarding claims 1, 4-5, 19-23, 48, 55, and 57; Brewer et al discloses a system and method, said system and method comprising:

a) at least one first module considered to be an ingress side line (101 of figures 1 and 12) capable of obtaining a respective first measurement of a characteristic a spontaneously emitted signal (i.e., a transmitter [1202 of figure 12] for transmitting a signal an optical switch [19 of figure 12] and to measure the transmitting signal by a receiver [1201 of figure 12]) to that is supplied to an optical component is considered to be an optical switch (105 of figures 1 and 12);

b) at least one second module (i.e., an egress side line [104 of figure 1]), wherein each one (i.e., an internal optics ASIC [17-1 of figure 1]) of said at least one second module (104 of figure 1) is associated to one (i.e., an internal optics ASIC ingress [11-1 of figure 1]) of said least one first module (101 of figure 1), said at least one second module (104 of figure 1) capable of obtaining a respective second measurement the characteristic of the spontaneously emitted signal (i.e., a SOF detect [1302-1 of figure 13] for measuring the OSM from the optical switch) for which a respective first measurement of the characteristic was obtained by its associated first module (101 of figures 1 and 12), the respective second measurement being obtained upon reception of the spontaneously emitted signal from the optical component (105 of figure 1). See figures 1-13.



Brewer et al discloses all of features of claimed invention except for a processing module in communication with said at least one first module and said at least one second module for determining a feature the optical component based on the first and second measurements. However, Chen teaches that it is known in the art to provide processing arrangement for optical switch comprises a ingress module (520 of figure 6) and an optical switch fabric (510 of figure 6) and egress module (530 of figure 6), and a processing module (i.e., a switch control module (501 of figure 6) in communication with said at least one first module (520 of figure 6) and said at least one second module (530 of figure 6) for determining or comparing a feature the optical component based on the first and second measurements (col.8 lines 25-45). See figures 1-15.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with a processing module in communication with said at least one first module and said at least one second module for determining a feature the optical component based on the first and second measurements as taught by Chen for the purpose of controlling degree of processing power distribution as a distributed signaling architecture, or routing architecture.

Regarding claims 2 and 20; Brewer et al discloses said at least one first module (101 of figure 1) includes a plurality of first modules (11-1 to 11-n and 12-1 to 12-n of figure 1) and said at least one second module (104 of figure 1) includes a plurality of second modules (17-1 to 17-n and 18-1 to 18-n of figure 1).

Regarding claims 3 and 21; Brewer et al discloses each second (17-1 of figure 1) from said plurality of second modules (17-1 to 17-n and 18-1 to 18-n of figure 1) is associated to a first module (11-1 of figure 1) from said plurality of first modules (11-1 to 11-n and 12-1 to 12-n of figure 1) by virtue of an associated connection path (110, 120 of figure 1) through the optical component (105 of figure 1), said processing module (102, 103 of figure 1) being capable of obtaining knowledge of all of the connection paths (101, 120 of figure 1).

Regarding claims 6 and 28; Brewer et al discloses the feature of the optical component (105 of figure 1) for determined by said processing module (102, 103 of figure 1) is the validity of a selected one the connection paths (110, 120 of figure 1).

Regarding claims 50 and 53; Brewer et al discloses a device (i.e., transmitter [1202 of figure 12] and receiver [1201 of figure 12]) for generating and receiving the spontaneously emitted signal.

Claims 7, 13, 24-27, 34, 40-47, 49, 51-52, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer et al in view of Chen as applied to claims 1-3, 19-21, and 48 above, and further in view of Alvarez et al (U.S. Patent No. 6,731,832).

Regarding claim 7; Brewer et al in view of Chen discloses the feature of the optical component determined by said processing module is the optical loss of a selected one of the connection paths. However, Alvarez et al teaches that it is known in the art to provide the feature of the optical component (210 of figure 2) for determined by said processing module ((260 of figure 2) is the optical loss of a selected one of the

connection paths (col.5 lines 50-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with the feature of the optical component determined by said processing module is the optical loss of a selected one of the connection paths as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Regarding claims 13 and 34; Brewer et al in view of Chen discloses all of features of claimed invention except for the characteristic of the spontaneously emitted signal measured by the first and second modules associated to a selected one of the connection paths is optical power, and wherein the feature of the optical component determined by said processing module is the optical loss of a selected one of the connection paths. However, Alvarez et al teaches that it is known in the art to provide the characteristic of the spontaneously emitted signal measured by the first and second modules (230, 235 of figure 2) associated to a selected one of the connection paths is optical power (figure 3), and wherein the feature of the optical component (210 of figure 2) for determined by said processing module ((260 of figure 2) is the optical loss of a selected one of the connection paths (col.5 lines 50-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with the characteristic of the spontaneously emitted signal measured by the first and second modules associated to a selected one of the connection paths is optical power, and wherein the feature of the optical component determined by said

processing module is the optical loss of a selected one of the connection paths as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Regarding claims 24 and 49; Brewer et al in view of Chen discloses all of features of claimed invention except for further comprising a plurality of line cards, wherein said plurality of first modules and said plurality of second modules are distributed amongst said plurality of line cards. However, Alvarez et al teaches that it is known in the art to provide further comprising a plurality of line cards 270 of figure 2 and 420 of figure 4), wherein said plurality of first modules (230, 240 of figure 2) and said plurality of second modules (235, 245 of figure 2) are distributed amongst said plurality of line cards (270 of figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with further comprising a plurality of line cards, wherein said plurality of first modules and said plurality of second modules are distributed amongst said plurality of line cards as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Regarding claims 25-27; Brewer et al in view of Chen discloses all of features of claimed invention except for at least one first module is embedded on one of said plurality of line cards and least one second module embedded on one of said plurality

Art Unit: 2877

of line cards. However, Alvarez et al teaches that it is known in the art to provide further comprising at least one first module (240 of figure 11) is embedded on one of said plurality of line cards (1170 of figure 11) and least one second module (245 of figure 12) embedded on one of said plurality of line cards (1270 of figure 12). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with at least one first module is embedded on one of said plurality of line cards and least one second module embedded on one of said plurality of line cards as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Regarding claims 40 and 44; Brewer et al in view of Chen discloses all of features of claimed invention except for at least one first module or second module includes an optical tap for accessing the respective spontaneously emitted signal. However, Alvarez et al teaches that it is known in the art to provide at least one first module (i.e., ingress module [240 of figure 11]) or second module (i.e. egress module [245 of figure 12]) includes an optical tap (figures 11-12) for accessing the respective spontaneously emitted signal (col.17 lines 35-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with a processing module in communication with at least one first module includes an optical tap for accessing the respective spontaneously emitted signal as taught by Alvarez et al for the purpose of improving technology in the communication of

data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Regarding claims 41-42 and 45-46; Brewer et al in view of Chen discloses all of features of claimed invention except for said at least one optical tap diverts a portion of the respective spontaneously emitted signal to an optical power monitor and said optical power monitor obtains the first measurement (or second measurement) of the characteristic of the respective spontaneously emitted signal associated to the at least one first module (or second module). However, Alvarez et al teaches that it is known in the art to provide said at least one optical tap (figure 11 and col.17 lines 35-55) diverts a portion of the respective spontaneously emitted signal to an optical power monitor (260 of figure 2) and said optical power monitor (260 of figure 2) obtains the first measurement of the characteristic of the respective spontaneously emitted signal associated to the at least one first module (240, 230 of figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with said at least one optical tap diverts a. portion of the respective spontaneously emitted signal to an optical power monitor and said optical power monitor obtains the first measurement (second measurement) of the characteristic of the respective spontaneously emitted signal associated to the at least one first module (or second module) as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Regarding claims 43 and 47; Brewer et al in view of Chen and further in view of Alvarez et al discloses all of features of claimed invention except for said optical power monitor includes a dynamic range of greater than 30 dB. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine system of Brewer et al with said optical power monitor includes a dynamic range of greater than 30 dB, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 51-52; Brewer et al in view of Chen discloses all of features of claimed invention except for said device that generates said spontaneously emitted signal is an optical amplifier and said device that generates said spontaneously emitted signal is embedded in a line card. However, Alvarez et al teaches that it is known in the art to provide said device (302 of figure 3) that generates said spontaneously emitted signal is an optical amplifier ((342 of figure 3) and said device (302 of figure 3) that generates said spontaneously emitted signal is embedded in a line card (270 of figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with said device that generates said spontaneously emitted signal is an optical amplifier and said device that generates said spontaneously emitted signal is embedded in a line card as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Regarding claim 54; Brewer et al in view of Chen discloses all of features of claimed invention except for said optical amplifier also functions to amplify a plurality of optical traffic signals that pass through said optical component. However, Alvarez et al teaches that it is known in the art to provide said optical amplifier (324 of figure 2) also functions to amplify a plurality of optical traffic signals (figure 3) that pass through said optical component (210 of figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with said optical amplifier also functions to amplify a plurality of optical traffic signals that pass through said optical component as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections:

Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brewer et al (U.S. Patent No. 6,711,357) in view of Alvarez et al (U.S. Patent No. 6,731,832).

Regarding claim 56; Brewer et al discloses a system comprising:
at least one module (i.e., ingress [101 of figures 1 and 12]), wherein one (i.e., internal optics ASIC [11-1 of figures 1 and 12]) of said at least one modules (101 of figure 12) is capable of:

- i) receiving from the optical component (105 of figure 12) a respective spontaneously emitted signal by a receiver RX (1201 of figure 12) ; and
- ii) obtaining a measurement of a characteristic of the respective spontaneously emitted signal to the internal optics ASIC (11-1 of figure 12);

c) a processing module (102, 103 of figure 1) in communication with said at least one module (101 of figure 1) for determining a feature of the optical component based on the measurement obtained by said at least one second module (12-1 of figure 1). See figures 1-14.

Brewer et al discloses all of features of claimed invention except for an amplifier for supplying at least one spontaneously emitted signal to the optical component. However, However, Alvarez et al teaches that it is known in the art to provide an amplifier (342 of figure 3) for supplying at least one spontaneously emitted signal to the optical component (210 of figure 2). See figures 1-48.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify system of Brewer et al with an amplifier for supplying at least one spontaneously emitted signal to the optical component as taught by Alvarez et al for the purpose of improving technology in the communication of data at ever higher rates with advantages such as flexibility, efficient band-width utilization, fixed bandwidth connections.

Allowable Subject Matter

Claims 8-12, 14-18, 29-33, and 35-39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, taken alone or in combination, fails to discloses or render obvious a system and a method comprising all the specific elements with the specific combination including of said processing module is operative to: a) evaluate a degree of

Art Unit: 2877

similarity between the particular first and second measurements obtained by the first and second modules associated to a selected one of the connection paths; b) determine the feature of the optical component on the basis of the degree of similarity evaluated in a) set forth in claims 8, 14, 29, and 35.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fant et al (6950215) discloses method and apparatus for monitoring optical switches; Beshai et al (6876629) discloses rate controlled multi-class high capacity packet switch; Beshai (6700896) discloses high capacity WDM data network; Graves et al (6606427) discloses switch for optical signals; Beshai et al (6486983) discloses agile optical core distributed packet switch; Chen et al (6188674) discloses method and apparatus for packet loss measurement.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

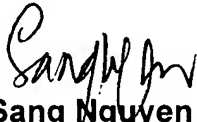
Art Unit: 2877

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 14, 2006


Sang Nguyen
Patent Examiner
Art Unit 2877